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Bremsstrahlung in wormhole spacetime with infinitely short throat

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Abstract

We consider the total energy loss and spectral density of uniformly moving electrically charged particles in the spacetime of a wormhole with an infinitely short throat. We show that the total energy loss E~e2vγa2/b3, where γ is relativistic factor, a is the radius of the wormhole's throat, and b is the impact factor. The spectrum of the energy for particles radially moving through the wormhole's throat is E~e2vγ/a. The spectral density of the total energy has a maximum at frequency ωm~vγ/b and at ωm~vγ/a for radial motion. © 2014 American Physical Society.

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